SN-500 Manual

Model: SN-500-T-A1/SN-500-TW-A1/SN-500-TG-A1

1 August 2016

Contents

1. FUNCTION OVERVIEW

1. Support PC and SD card integrated control; work with EN-408/EN-508 series controller, can switch freely between PC control and SD card control which is flexible and convenient.
2. When SN-500 works as main controller in SD card control system, the effects of sub-controller on the same link can be changed by just changing the effects in its SD card.
3. Time control, GPS sync and WIFI remote control are optional as additional functions.
4. Specialized software of making animation is included, users can make their own effects.
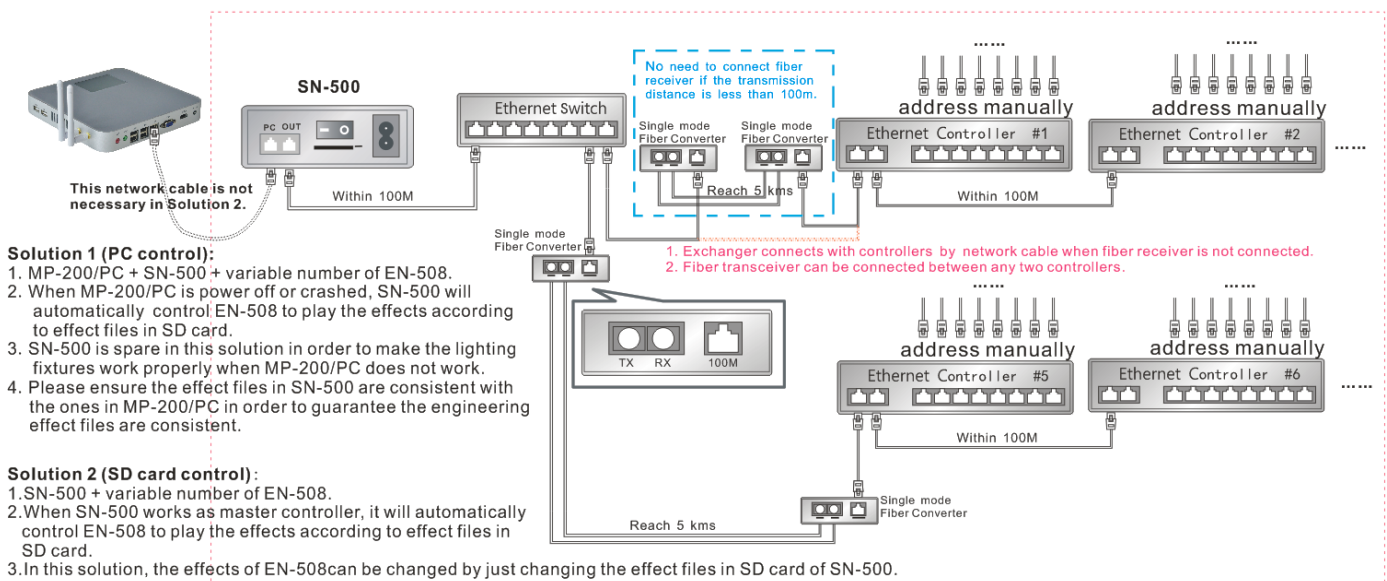
2. TECHNICAL PARAMETERS

2.1 PRODUCT INFORMATION

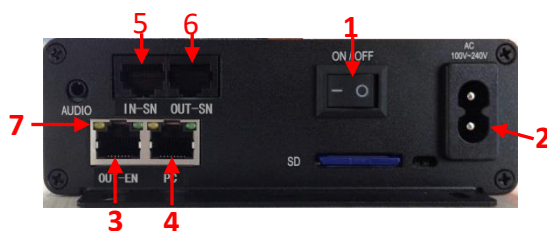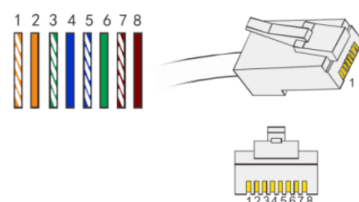|	
Size:	220L×140W×45H (mm)
Input voltage:	AC 100V - 240V
Input signal:	SW Ethernet Protocol
Work power:	<4W
Working temperature:	-15℃～60℃
Relative humidity:	≤ 50%
Transmission distance:	Use UTP—unshielded twisted pair cable, distance between the controllers can be 100m. For further distance, fiber converter can be used and the distance can reach 5 km.
IP grade:	IP0 (not dustproof and not waterproof)
Working environment:	Please install under dry indoor condition, avoid any dust, moist and rain.
Weight:	900g (N.W. 800g)
Accessories attached:	×1, ×1, ×1

3. CONNECTION MODE

3.1 Connection Diagram of Controller

Solution 1 (PC control):
1. MP-200/PC + SN-500 + variable number of EN-508.
2. When MP-200/PC is power off or crashed, SN-500 will automatically control EN-508 to play the effects according to effect files in SD card.
3. SN-500 is spare in this solution in order to make the lighting fixtures work properly when MP-200/PC does not work.
4. Please ensure the effect files in SN-500 are consistent with the ones in MP-200/PC in order to guarantee the engineering effect files are consistent.

Solution 2 (SD card control)：
1. SN-500 + variable number of EN-508.
2. When SN-500 works as master controller, it will automatically control EN-508 to play the effects according to effect files in SD card.
3. In this solution, the effects of EN-508can be changed by just changing the effect files in SD card of SN-500.

3.2 INPUT INSTRUCTION

R J 45 cable plug use T568B line sequence

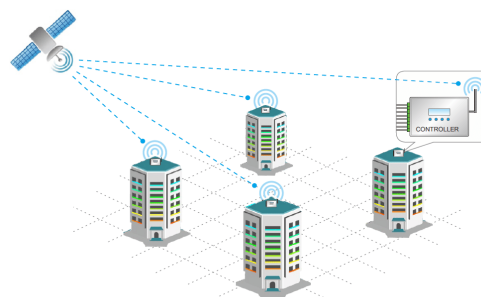|	Port/Indicator light	Function description
1	Switch (ON/OFF)	Switch of power supply.
2	AC100V-240V	Connect with power (AC100V-240V).
3	network cable port (OUT-EN)	In PC control system, connect with input port (IN) of EN-508 sub-controller. In SD card control system, connect with input port (IN) of EN-508 sub-controller.
4	network cable port (PC)	In PC control system, connect to PC wired network cable port in series. "PC" network cable port is not used in SD card control system.
5	network cable port (IN-SN)	Insert network cable, signal input, connect with previous SN controller as a series.
6	network cable port (OUT-SN)	Insert network cable, signal output, connect with next SN controller as a series or no need.
7	Signal indicator	It flickers when the controller sends or receives data properly.

★ **All the ports of network cables are made according to T568 line sequence (as the picture above left).**

3.3 GPS ANTENNA NOTES
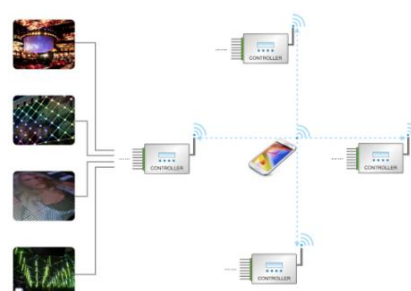
Please follow the operations below if GPS antenna is used.

2m GPS antenna is provided. User can also purchase GPS antenna with standard SMA interface according to on-site engineering requirement. The longer the antenna is, the larger the difficulty of searching satellite will be. Please pay attention to the quality of GPS antenna when purchasing.

a) GPS Antenna should be installed in open space to guarantee view angle within 30 degree, there is no big shades (such as trees, iron towers, buildings etc.)
b) To avoid the reflect wave influence, GPS Antenna should be more than 2m away from the metal objects which size is bigger than 20cm.
c) For the satellite appears on the equator more than other places, in the North Hemisphere, you'd better put the GPS antenna south of the installation place.
d) Please don't put GPS antenna around other transmitting and receiving equipment to avoid other transmitting antenna direction point to GPS antenna.
e) If two or more than two GPS antenna installed at the same time, please keep them 2m away with each other. Suggesting install different GPS antenna in differentplaces to avoid disturbing.

3.4 WIFI ANTENNA NOTES

a) Please try to keep WIFI Antenna perpendicular to the floor.
b) Wall, glass and interval would reduce WIFI signal rapidly during transmission. Besides, external electromagnetic interference (EMI) could lead to signal interruption, short transmission distance, failed connection and related problems. **Therefore, the distance between mobile phone and WIFI antenna cannot be too long which should be less than 30m without blocks.**
(Estimate strength of WIFI signal according to WIFI signal bar on the controller.)
c) Controller can only be controlled by ONE mobile APP. Also, one mobile APP can only control ONE controller.
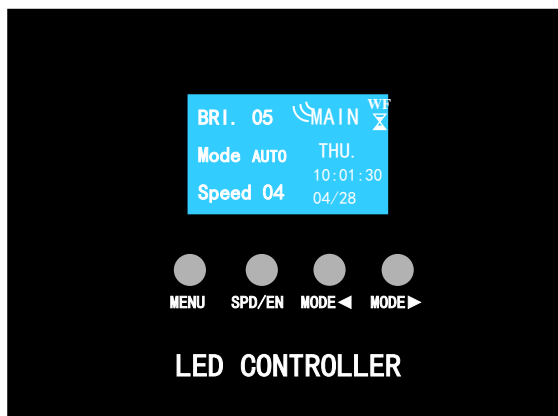
4. BASIC OPERATION

4.1 BUTTONS FUNCTION

Button	Function	Explanation
MENU	Menu key	picture / audio control / Voice control + audio mode selection; hold press 2 seconds to enter "MENU" setting.(Operation will be effective in SD card control
SPD/EN	Speed key	Common mode: 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 15, 20, 30, 50, 80, 99 Communication mode: 04AC, 06AC, 08AC, 10AC, 12AC, 20AC, 50AC, 99AC
	Confirm key	on menu mode, press "SPD/EN" save current setting
MODE◁	Mode- key	mode minus selection
MODE▷	Mkde+ key	mode add selection

4.2 INTERFACE INTRODUCCION

Display	Explanation
Mode	Current display mode
Speed	Current display speed
THU.	Day of the week
S D SD	Wait to enter SD card time control status
SD ⏳	Entered SD card time control status
((·	Controller is connected with mobile APP thus it is controllable
W F	Wait to enter WIFI time control status
WF ⏳	Entered WIFI time control status
10:00:35	Real Beijing time searched by GPS
04/28	Date (MM/DD)
00	Signal strength of searched GPS satellite (larger value with better signal)

Before turning on the controller, please well connected all signal cables, network cables and power cables of hardware, then turn on the power of main controller.

4.3 ENTER MENU

Long press "MENU" button on control panel for 2 seconds to enters menu setting up mode.

Long press "MENU" button for 2 seconds to exit menu setting up mode and return to control mode.
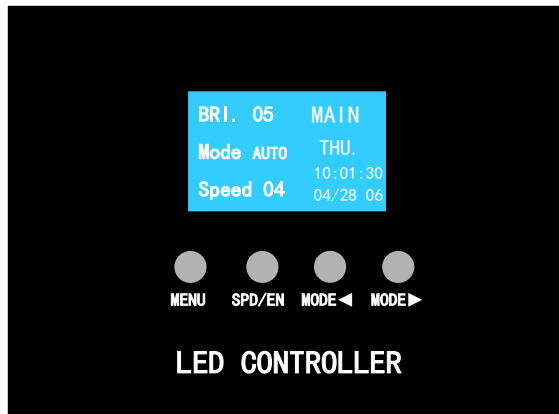
When any one of these situations occurs:

1. SN-500 does not connect with PC;

2. SN-500 does not connect with next EN-508;

3. SN-500 cannot read the SD card.

SN-500 will display "**LED CONTROLLER**" for 1 second after turning on the power, then it enters main interface (will not show "BOXNUM8888). Then indicator light of main board will not flicker and lighting fixture will not show any effect.
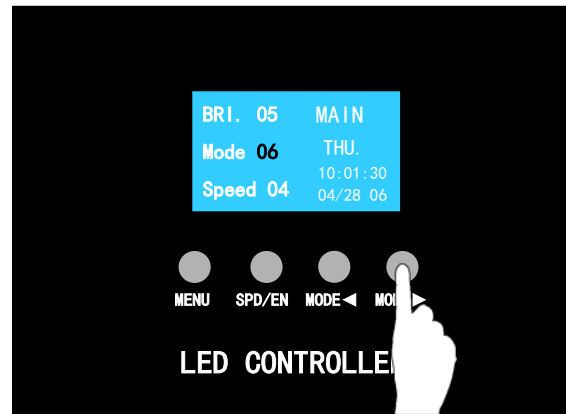
★ Please ensure the controller cables are well connected and there is correct bin file in the SD card of SN-500.
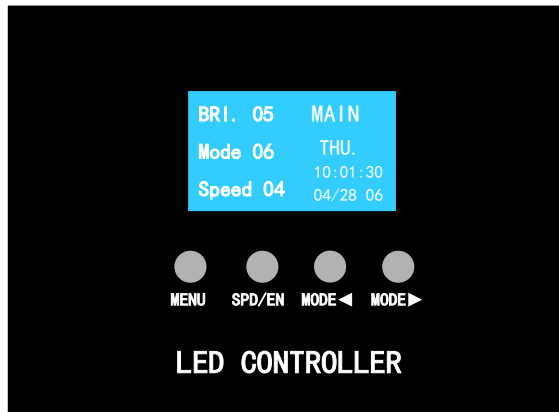
4.4 EFFECT SWITCHING

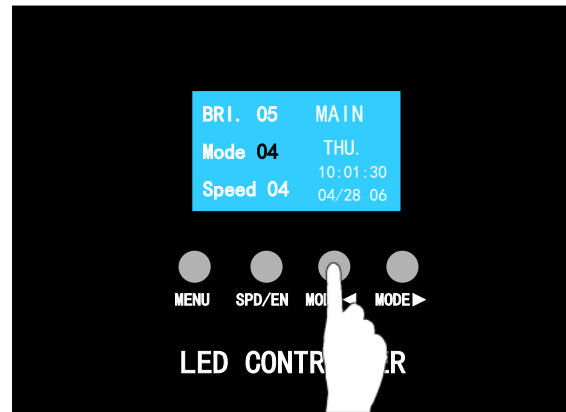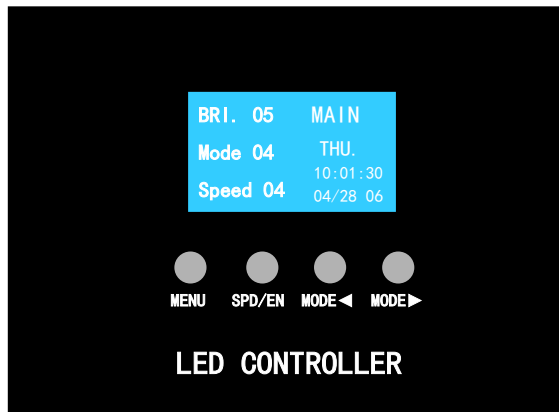Press "MODE◄" and "MODE►" on control panel to select effects.
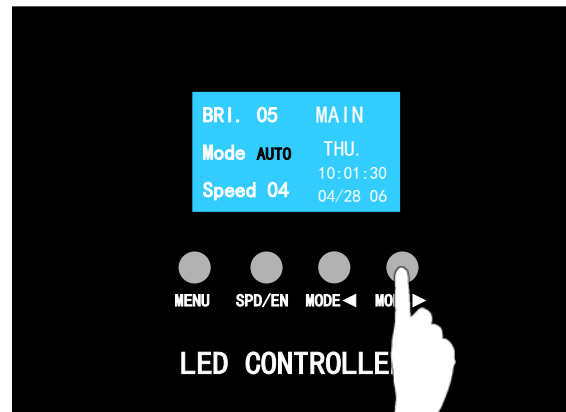

Auto mode

Press "MODE►" 6 times, the mode is 6.

Mode 6

Press "MODE◄" twice, the mode is 4.

Mode 4

Long press "MODE►" to become Auto mode.

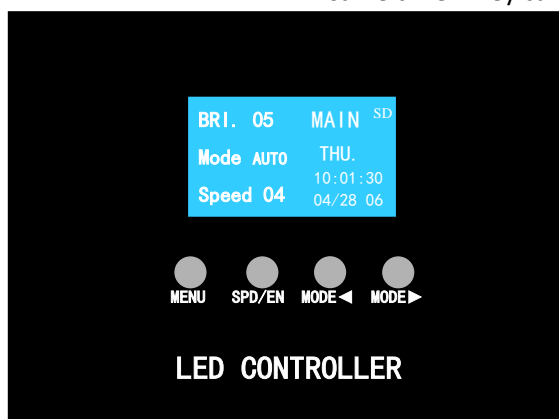★ When controller is connecting with mobile APP, the effect mode of lighting fixture can be selected by mobile APP.

4.5 SPEED SELECTION

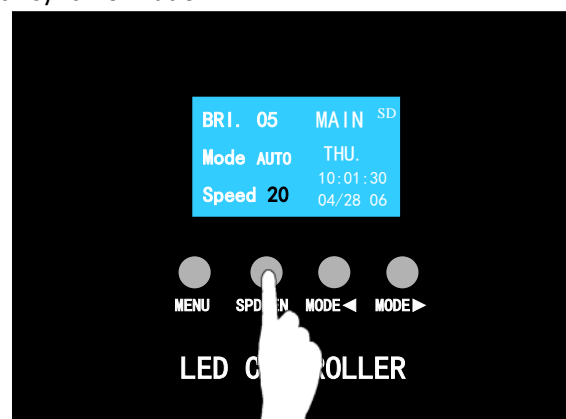Press button "SPD/EN" on control panel to select play speed, the less the rate, the quicker the speed.

Parameters	Speed Display																Notes
Main Control speed	03	04	05	06	07	08	09	10	11	12	15	20	30	50	80	99	Independent Speed
	04 AC		06 AC		08 AC		10 AC		12 AC		20 AC		50 AC		99 AC		Synchronization Speed
Frame Rate(ms)	30	40	50	60	70	80	90	100	110	120	150	200	300	500	1000	2000	
Frame Per Second	33	25	20	17	14	13	11	10	9	8	7	5	3	2	1	0.5	

※ Independent speed: Independent speed: this speed is decided by the meters of hurdle lights of clients, if it is less than actual meters, the data won't display.
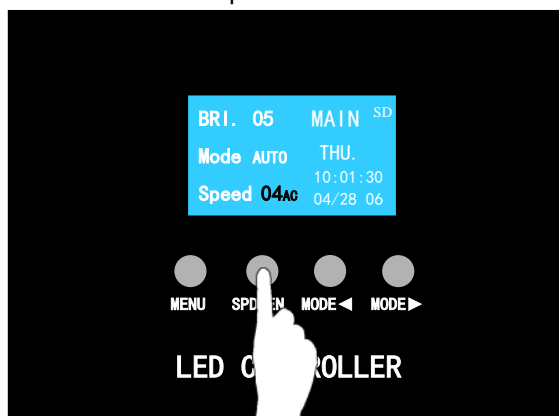
※ Synchronization speed: All the controllers set same speed and same mode, connect to power in the same time. They can reach synchronization.
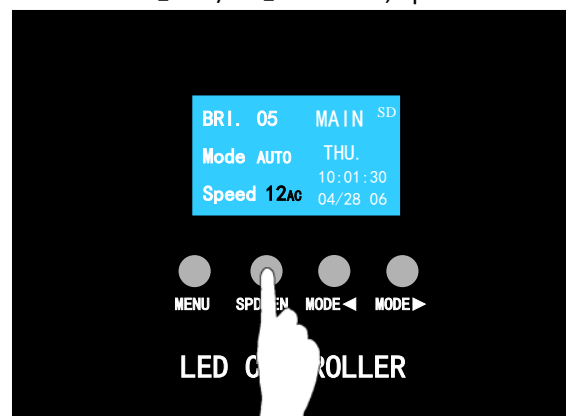

Speed=04

Press【SPD/EN】10 times, Speed=20

Press "SPD/EN" once again, Speed =04AC

Press "SPD/EN" 4 times, Speed =12AC

★ When controller successfully connects with mobile APP through WIFI, speed of effect can be adjusted in "Setting" of mobile APP.

For more detailed functions of mobile APP please refer to WIFI Mobile APP User Manual.
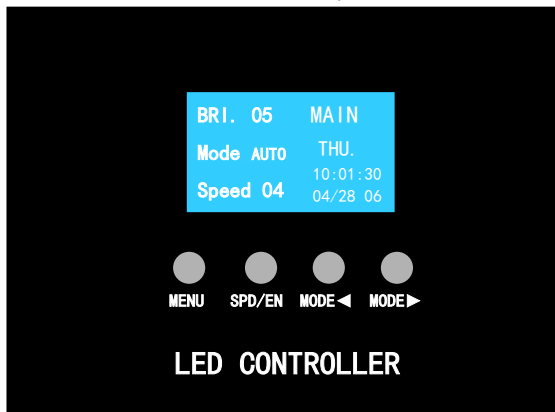
5. TIME CONTROL

It has time control function, SD card time control, GPS SYNC time control and mobile WIFI time control are optional.

※ **When controller does not have GPS SYNC time control function, maximum time control lists of player can be 10, and maximum 10 pcs of effects can be set in each list. When controller has GPS SYNC time control function, maximum time control lists of player can be 10, and only 1pc of effect can be set in each list.**
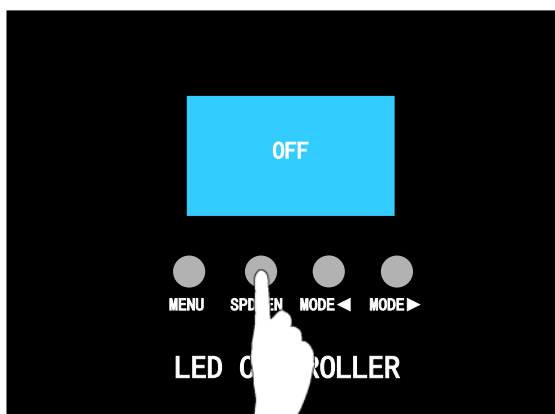
While switching on main controller, it will keep latest status of switching off previously.

If need to enter time control status, please switch it on manually and refer to the operations below.
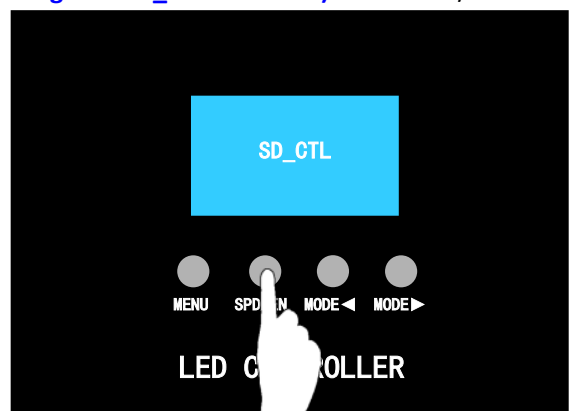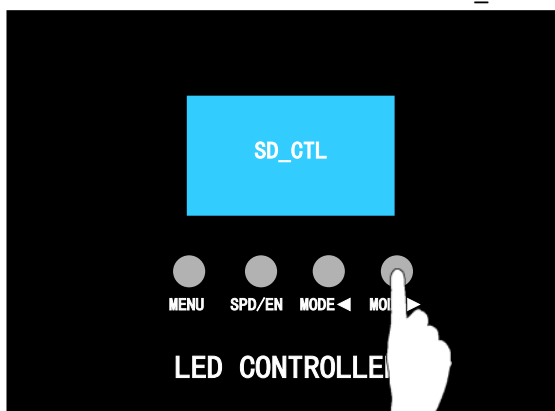
1. Press "MENU" button on control panel and hold for 2 sec. The LED display enters MENU setting up mode.

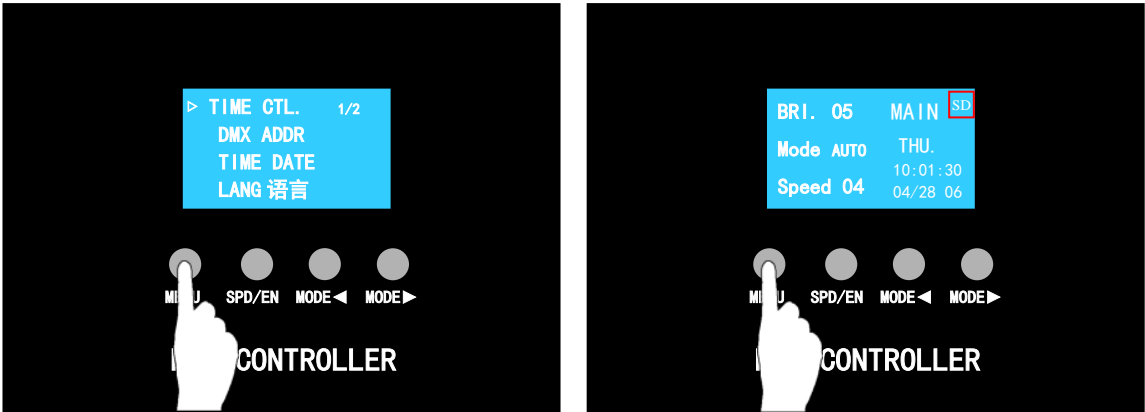2. Press " MODE◀" and " MODE▶" to select "TIME CTL". Press "SPD/EN" to enter it.

3. Press " MODE◀" or " MODE▶" to select "SD_CTL". **(Setting of WIFI_CTL the same)** Press "SPD/EN" to save.

4. Press "MENU" to return menu page, then long press "MENU" to exit menu.

  After exiting the menu, corresponding icon of time control status will display at the top right corner of LCD screen.
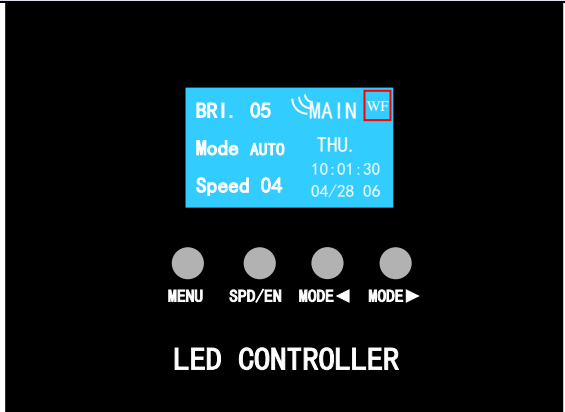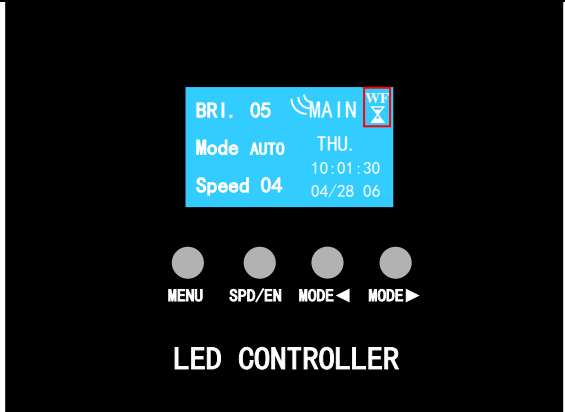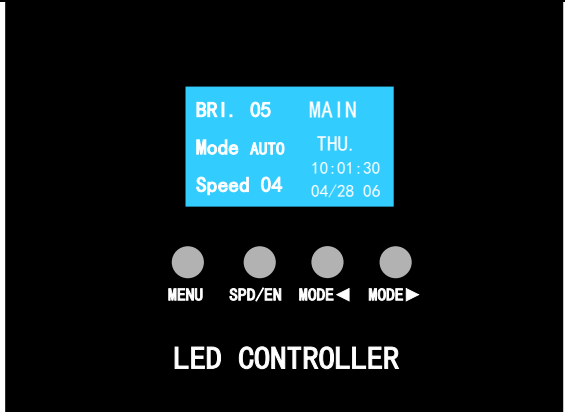

★ If current time is not in the range of time control list, the mode will be "Maximum mode + 1", the effect is black. Press "MODE◄" or "MODE►" under time control mode can exit this mode.

  If time control function is required, please enter the menu to set. Don't press any button after finishing the setting in order to prevent exiting time control function again (or shut down then restart).

The operations like pressing the button on SN-500 to switch mode and change speed are effective only if use SN-500 as master controller in SD card control solution.

※ **Time control status can be seen at the top right corner of LCD screen.**

Mode	Display	Description	Picture
SD-card time control	SD	Controller enters SD card time control status, but it does not reach the time set in the software. The lighting fixture is off.	
	SD (with hourglass)	Controller enters SD card time control status and it reaches the time set in the software. The controller will switch to corresponding effect mode set in time control list.	

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Mode	Display	Description	Picture
WIFI time control	WF	Controller enters WIFI time control status but it does not reach the time set in the software. The lighting fixture is off.	BRI. 05 MAIN WF Mode AUTO THU. 10:01:30 Speed 04 04/28 06 MENU SPD/EN MODE◀ MODE▶ LED CONTROLLER
	WF (with hourglass icon)	Controller enters WIFI time control status and it reaches the time set in the software. The controller will switch to corresponding effect mode set in time control list.	BRI. 05 MAIN WF Mode AUTO THU. 10:01:30 Speed 04 04/28 06 MENU SPD/EN MODE◀ MODE▶ LED CONTROLLER
Normal status		Exit time control when press "MODE◀" and "MODE▶" manually. No icon represents in the top right corner.	BRI. 05 MAIN Mode AUTO THU. 10:01:30 Speed 04 04/28 06 MENU SPD/EN MODE◀ MODE▶ LED CONTROLLER

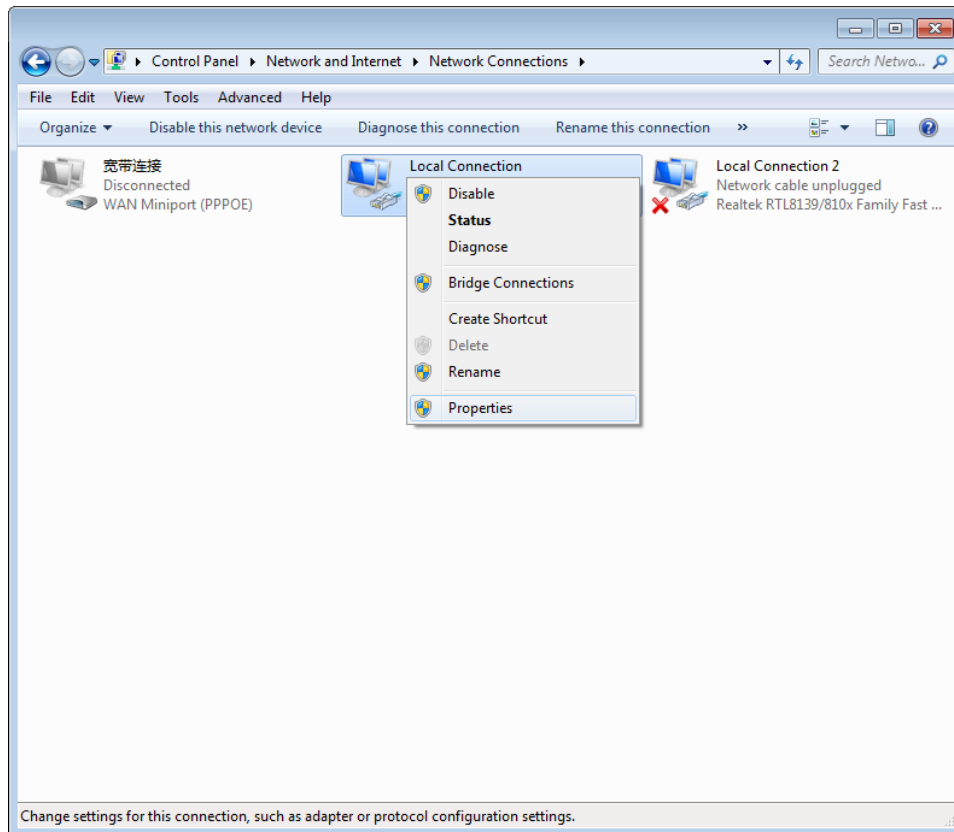★ **Please download the latest version of time control software.**

For any question, please don't hesitate to contact with us.

For the settings of SD card time control, please refer to "Software Manual of LED Player" "Setting of Time Control List".
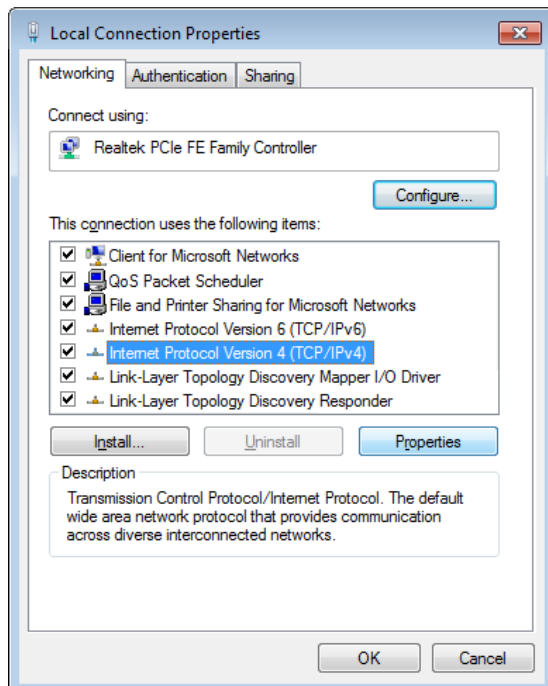
For the settings of WIFI time control, please refer to "WIFI Mobile APP User Manual".

6. IP Address Setting (PC)

1. Open "Network Connection" on the PC, right click "Local Connection" and select "Properties".

2. Select Internet Protocol (TCP/IP), then click "Properties".

3. Set IP address.

Note: When using SN-500 as spare controller in PC control solution, IP address of MP-200/PC cannot be "2.0.0.99".
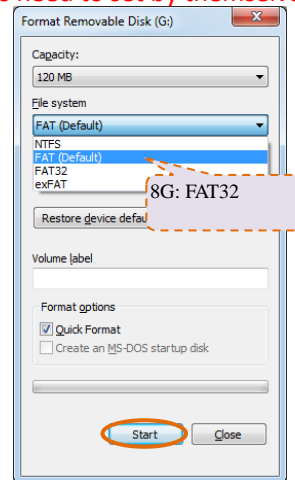
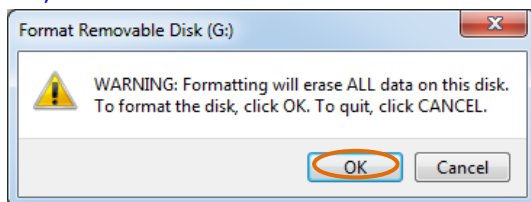4. Click "OK" after the setting is finished.

7. SD CARD COPY
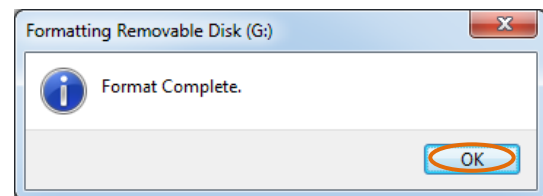
1) Right click the disk where the SD card locates.

2) Select –FAT (Can tick off "Quick Format") and click START. ★ PC's default is not 32KB, users need to set by themselves.
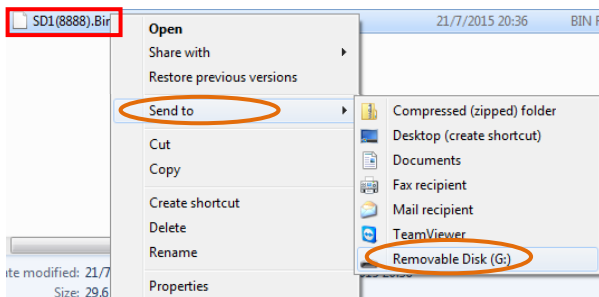

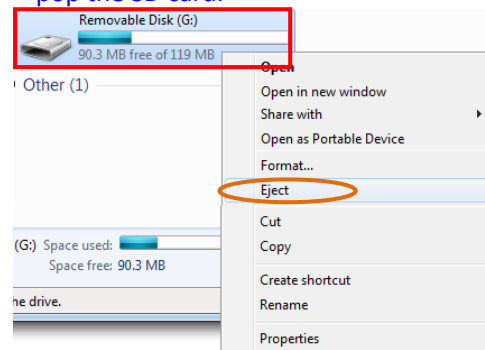8G: FAT32

3) Confirm to format the Disk.

4) Finished the formatted, click confirm to exit.

5) Right click SD1(8888).Bin file, send the file to removable disk.

6) Right click removable disk and select pop to pop the SD card.

7) Put the SD-card into controller. When start the equipment the SD- card can use. (There is only one bin file in the card.)

TIPS **E07 error will occur in controller if above format + SD Card Copy is used in WIN 8 above system. Please use the second method to copy SD Card again.**